CLAIMS

1. Method for the production of a glazing provided with a multilayer coating, said multiplayer coating being deposited on a glass substrate by cathodic sputtering at reduced pressure, characterised in that at least a first transparent dielectric layer is deposited on the substrate followed by the deposit of a functional layer based on an infrared reflective material, that in an atmosphere containing 20% oxygen at maximum, deposited on said functional layer is a first protective layer with a geometric thickness of 3 nm at maximum and composed of a material, of which the electronegativity different from oxygen is less than 1.9 and of which the electronegativity value is less than that of said infrared reflective material, followed by the deposit, in an atmosphere containing 50% oxygen at maximum, of a second protective layer with a geometric thickness of 7 nm at maximum and composed of a material, of which the electronegativity difference from oxygen is greater than 1.4, and that at least a second transparent dielectric layer is then deposited.

2. Method according to Claim 1, characterised in that the first protective layer is composed of a material, of which the electronegativity difference from oxygen is less than 1.8 and preferably less than 1.7.

3. Method according to any one of Claims 1 or 2, characterised in that the second protective layer is composed of a material, of which the electronegativity difference from oxygen is greater than 1.6 and preferably greater than 1.8.

4. Method according to any one of Claims 1 to 3, characterised in that the electronegativity value of the material of the first protective layer is at least 0.05 less than that of the infrared reflective material.

5. Method according to any one of Claims 1 to 4, characterised in that the material of the second protective layer has a lower

electronegativity value than the electronegativity value of the material of the first protective layer.

6. Method according to Claim 5, characterised in that the material of the second protective layer has an electronegativity value at least 0.1, and preferably at least 0.2, less than the electronegativity value of the material of the first protective layer.

7. Method according to any one of Claims 1 to 6, characterised in that the functional layer based on an infrared reflective material is an Ag-based layer.

8. Method according to any one of Claims 1 to 7, characterised in that the first protective layer is Ni-based.

9. Method according to Claim 8, characterised in that the first protective layer is NiCr-based, and preferably based on an NiCr 80/20 alloy.

10. Method according to any one of Claims 1 to 9, characterised in that the material of the second protective layer is selected from titanium, aluminium or tantalum, and preferably titanium.

11. Method according to any one of Claims 1 to 10, characterised in that the first protective layer is deposited in a thickness in the range of between 0.5 nm and 2.5 nm, preferably 0.5 nm and 2 nm, and advantageously between 0.6 nm and 1.5 nm.

12. Method according to any one of Claims 1 to 11, characterised in that the second protective layer is deposited in a thickness in the range of between 2 nm and 6 nm.

13. Method according to any one of Claims 1 to 12, characterised in that the material of the second protective layer is deposited in metal or sub-oxidised form, and that it is then oxidised by the oxidising plasma of the deposit of the following layer.

14. Method according to any one of Claims 1 to 13, characterised in that the second transparent dielectric layer is based on a different element from the material of the second protective layer.

15. Method according to any one of Claims 1 to 14, characterised in that at least one of the first and second transparent dielectric layers contains a zinc-based metal oxide.

16. Method according to Claim 15, characterised in that said metal oxide is an oxide of a zinc- and tin-based alloy.

17. Method according to Claim 16, characterised in that at least one of the first and second dielectric layers contains two layers of oxide of zinc- and tin-based alloys in different proportions.

18. Method according to any one of Claims 15 to 17, characterised in that each of the first and second dielectric layers contains a zinc-based metal oxide.

19. Method according to any one of Claims 1 to 18, characterised in that at least two functional layers based on an infrared reflective material are deposited, each followed by the deposit of first and second protective layers, and in that at least one intermediate dielectric layer is deposited between said functional layers.

20. Method according to any one of Claims 1 to 19, characterised in that a final titanium-based protective layer is deposited to terminate the multilayer coating.

21. Method for the production of a bent or toughened glazing provided with a multilayer coating, characterised in that a coated substrate obtained by the method according to any one of Claims 1 to 20 is then subjected to a bending or toughening operation.

22. Glazing provided with a multilayer coating, characterised in that it comprises a glass substrate, on which is deposited at least one functional layer based on an infrared reflective material, the functional layer or at least one of the functional layers being enclosed by at least one transparent dielectric layer, and that on its face opposite the substrate and directly in contact therewith, said functional layer is covered by a first protective layer with a geometric thickness of 3 nm at maximum and composed of a metal- or semi-metal-based material in metal, nitrided or sub-oxidised form, of which the electronegativity difference from oxygen is less than 1.9 and of which the electronegativity value is less than that of the infrared reflective material, followed by a second protective layer with a geometric thickness of 7 nm at maximum and composed of a material based on metal or semi-metal in substantially totally oxidised form, of which the electronegativity difference from oxygen is greater than 1.4 and which is different from the material of the transparent dielectric layer directly adjoining it.

23. Glazing according to Claim 22, characterised in that it comprises at least two functional layers, and that each of the functional layers is covered by said first and second protective layers.

24. Glazing according to any one of Claims 22 or 23, characterised in that the or at least one of the first protective layers is/are composed of a material, of which the electronegativity difference from oxygen is less than 1.8 and preferably less than 1.7.

25. Glazing according to any one of Claims 22 to 24, characterised in that the or at least one of the second protective layers is/are composed of a material, of which the electronegativity difference from oxygen is greater than 1.6 and preferably greater than 1.8.

26. Glazing according to any one of Claims 22 to 25, characterised in that the electronegativity value of the material of the or at least one of the first protective layers is at least 0.05 less than that of the infrared reflective material adjoining it.

27. Glazing according to any one of Claims 22 to 26, characterised in that the material of the or at least one of the second protective layers has a lower electronegativity value than the electronegativity value of the material of the first protective layer adjoining it.

28. Glazing according to Claim 27, characterised in that the material of the or at least one of the second protective layers has an electronegativity value at least 0.1, and preferably at least 0.2, less than the electronegativity value of the material of the first protective layer adjoining it.

29. Glazing according to any one of Claims 22 to 28, characterised in that the or at least one of the functional layers is/are Ag-based, and that said first protective layer or layers is/are based on an alloy of Ni and Cr, and said second protective layer or layers is/are formed from titanium oxide.

30. Glazing according to any one of Claims 22 to 29, characterised in that at least one of the dielectric layers is zinc oxide-based.

31. Glazing according to Claim 30, characterised in that at least one of the dielectric layers contains an oxide of a zinc and tin alloy.

32. Glazing according to Claim 31, characterised in that each of the dielectric layers contains an oxide of a zinc and tin alloy.

33. Bent or toughened glazing provided with a multilayer coating, characterised in that it comprises a glass substrate, on which is deposited at least one functional layer based on an infrared reflective material, the functional layer or at least one of the functional layers being enclosed by at least one transparent dielectric layer, and that on its face opposite the substrate and directly in contact therewith, said functional layer is covered by a first protective layer with a geometric thickness of 3 nm at maximum and composed of a metal- or semi-metal-based material in oxidised or sub-oxidised form, of which the electronegativity difference from oxygen is less than 1.9, followed by a second protective layer with a geometric thickness of 7 nm at maximum and composed

of a material based on metal or semi-metal in substantially totally oxidised form, of which the electronegativity difference from oxygen is greater than 1.4 and which is different from the material of the transparent dielectric layer directly adjoining it.

34. Glazing according to Claim 33, characterised in that it comprises at least two functional layers, and that each of the functional layers is covered by said first and second protective layers.

35. Glazing according to any one of Claims 33 or 34, characterised in that the or at least one of the first protective layers is/are composed of a material, of which the electronegativity difference from oxygen is less than 1.8 and preferably less than 1.7.

36. Glazing according to any one of Claims 33 to 35, characterised in that the or at least one of the second protective layers is/are composed of a material, of which the electronegativity difference from oxygen is greater than 1.6 and preferably greater than 1.8.

37. Glazing according to any one of Claims 33 to 36, characterised in that the electronegativity value of the material of the or at least one of the first protective layers is less than that of the infrared reflective material adjoining it, and preferably by at least 0.05.

38. Glazing according to any one of Claims 33 to 37, characterised in that the material of the or at least one of the second protective layers has a lower electronegativity value than the electronegativity value of the material of the first protective layer adjoining it.

39. Glazing according to Claim 38, characterised in that the material of the or at least one of the second protective layers has an electronegativity value at least 0.1, and preferably at least 0.2, less than the electronegativity value of the material of the first protective layer adjoining it.

40. Glazing according to any one of Claims 33 to 39, characterised in that the functional layer is Ag-based, and that said first protective layer or layers is/are based on an alloy of Ni and Cr, and said second protective layer or layers is/are formed from titanium oxide, and that at least one of the dielectric layers contains a zinc-based oxide, preferably an oxide based on a zinc-tin alloy.

41. Glazing provided with a multilayer coating, characterised in that it comprises a glass substrate, on which is deposited in succession at least a first transparent dielectric layer, a silver-based functional layer, a first protective layer based on a nickel alloy in metal, nitrided, oxidised or sub-oxidised form, directly in contact with the functional layer, a second titanium oxide-based protective layer deposited on and in contact with the first protective layer, and a second transparent dielectric layer composed of a material different from the material of the second protective layer directly adjoining it.

42. Glazing according to Claim 41, characterised in that the second protective layer has a geometric thickness of 7 nm at maximum.

43. Glazing according to any one of Claims 41 or 42, characterised in that the first protective layer has a geometric thickness of 3 nm at maximum.

44. Glazing according to any one of Claims 41 to 43, characterised in that the first protective layer is based on a nickel and chromium alloy.

45. Glazing according to any one of Claims 41 to 44, characterised in that at least one of the transparent dielectric layers is zinc oxide-based.

46. Glazing according to any one of Claims 41 to 45, characterised in that at least one of the transparent dielectric layers is based on a zinc and tin oxide.

47. Glazing according to any one of Claims 41 to 46, characterised in that it is subjected to a thermal treatment such as toughening or bending, and that the nickel alloy-based, preferably nickel and chromium-based, first protective layer is at least partially oxidised subsequent to said thermal treatment.

48. Glazing according to any one of Claims 41 to 47, characterised in that at least two silver-based functional layers are deposited on the glass substrate and separated by at least one intermediate dielectric layer, and that said first and second protective layers are deposited on and directly in contact with each of the functional layers.